

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
CALIFORNIA REGION
630 SANSOME STREET
SAN FRANCISCO, CALIFORNIA 94111

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July 17, 1969

Mr. Jerome P. Morlock, Area Forester
Bureau of Indian Affairs
2800 Cottage Way
Sacramento, California 95825

Dear Mr. Morlock:

As requested by your office, Roy Blomstrom and Dave Graham from our Pest Control Branch visited the Fort Bidwell Indian Reservation forest lands on July 8 with Arthur A. Lusher.

As you know, the area is predominately white fir with a scattering of ponderosa pine. Most of it now has been cutover, with the last timber sale completed during 1955-1957.

In 1962, 1963 and 1964 we reported heavy attacks by the fir engraver beetle, Scolytus ventralis, at Fort Bidwell and other areas in this part of the State. A large number of white fir snags resulting from these attacks are now quite visible throughout most of the area. The severity of the attacks has apparently been decreasing over the last several years and only a few trees near the southeast corner of the area were dying from this year's scolytus infestations. This infestation should now remain at a low level.

The cause of scolytus outbreaks is not known. The 1962-64 scolytus outbreaks developed after several years of below-normal precipitation. The lowered resistance of the trees may have been one of the contributing factors. A satisfactory control method for scolytus has not been developed. Because of the attack pattern of scolytus, entomologists in general, do not hold out much hope for success in suppressing this insect either by salvage logging or residual sprays.

Dwarf mistletoe, Arceuthobium campylopodum f. abietinum, which is parasitizing the white fir, apparently has accelerated in intensity after the area was logged. The intensity of dwarf mistletoe infection varies considerably throughout the area. Some small areas are very heavily infested while other areas appear to be almost dwarf mistletoe-free.

Our experience in dwarf mistletoe in true firs is very limited. However, we have surveyed thousands of acres of pine stands to determine the occurrence of dwarf mistletoe. In these surveys we have never found



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dwarf mistletoe occurring as a continuous infection center covering an area as large as the Fort Bidwell Forest. In the California pine stands, dwarf mistletoe normally occurs in discrete infection centers ranging in size from several infected trees to centers covering several hundred acres, with uninfected stands surrounding the centers. This may be true for the Fort Bidwell Forest.

Even in the most severely infected areas no mortality of mature trees from dwarf mistletoe is occurring. Some growth loss is undoubtedly occurring but this was not measured during this visit. The heavily infected overstory in these patches does pose a very real threat to the white fir reproduction that is coming in.

Where regeneration of the present stand is the management goal, current research indicates that eliminating all of the overstory white fir (the unmerchantable as well as the merchantable) in two operations may be the most satisfactory procedure. During the first cut, enough white fir seed trees should be left on the area to provide both an adequate seed source and sufficient shade for the new seedlings. As soon as the reproduction reaches a height of three feet (preferably before, if the area becomes adequately stocked) all of the overstory must be removed in order to prevent too much dwarf mistletoe reinfection.

If more precise information is needed in order to develop future management prescriptions for the area, a dwarf mistletoe survey should be made. The object of the survey would be to delineate as accurately as possible the stands or areas that can or should be regenerated and freed of the dwarf mistletoe threat at the same time. Present growth rate should probably be one of the primary considerations. Pest control funds are available at the Washington Office for dwarf mistletoe surveys and we have successfully contracted this type of survey in the past.

Some of the white fir are infected with the needle cast fungus, Virgella robusta (formerly named Hypoderma robustum). Although fairly heavy defoliation is occurring on a few widely scattered trees, this disease should not cause any serious damage except temporary growth loss. Due mainly to climatic requirements this organism only rarely severely infects a tree continuously.

The possibility of planting red fir, Abies magnifica, in the area was also discussed briefly. Although this may be an answer to the dwarf mistletoe problem because of form-host specificity, the lack of established red fir in the area makes this appear as a somewhat risky proposal. At any rate, it probably should be limited to only a small

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pilot-type operation until more information on survival, site capabilities and possible potential pest control problems becomes available.

If you desire help with a disease survey design or additional information, please let us know.

Just in case you may not have them, a copy of three fairly recent publications on true fir dwarf mistletoe, and one on the fir engraver beetle, are enclosed.

Sincerely,

s/R. E. Dasmann

R. E. DASMANN
Acting Chief, Division of Timber Management

Enclosures

FPL #13, Fir Engraver Beetle
FPL #89, Dwarf Mistletoe on True Firs in Calif.
Dwarf Mistletoe on Red Fir (Robert Scharpf)
Dwarf Mistletoe Parasitizing True Firs (Tech. Bull. 1362)

